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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Keiji Take

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EXAMINER

GU, YU

ART UNIT

PAPER NUMBER

2617

NOTIFICATION DATE

DELIVERY MODE

11/30/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.		Applicant(s)	
	10/562,676		TAKE, KEIJIRO	
	Examiner		Art Unit	
	YU (Andy) GU		2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24,26,28-31,33-39 and 41-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24,26,28-31,33-39 and 41-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Applicant's amendment, filed on 10/16/2009, has been entered and carefully considered. Claims 24, 28-30 and 36-38 have been amended. Accordingly, claims 24, 26, 28-31, 33-39 and 41-46 are pending.

Continued Examination under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/16/2009 has been entered.

Interview Summary

3. The Examiner acknowledges that the interview summary presented in the amendment filed on 3/02/2009 as a complete interview summary pursuant to MPEP § 713.04.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 24, 26, 28-31, 33-39 and 41-46** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 recites the limitation "*determining whether an active signal connection*

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currently exists between the mobile communication terminal and the radio access network or the core network". An active signal connection in above context is not patentably definite. In the art, when a mobile is registered with a base station, there is often periodical signaling between the base station and the mobile; therefore, this type of signaling can be interpreted as active signal connection. Alternatively, when a mobile engages in a voice or data session, it has an active signal connection. The Examiner suggests that the Applicant further clarify the meaning of "active signal connection". Other independent claims are rejected on the same ground (s). All dependent claims are rejected by virtue of dependency.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. **Claims 24, 26, 28-31, 33-39 and 41-46** are rejected under 35

U.S.C. 103(a) as being unpatentable over US 6292667 B1 Wallentin et al.

(hereinafter Wallentin) in view of US 6792278 B1 Ahmavaara et al (hereinafter Ahmavaara)

Regarding **claim 24** (currently amended), Wallentin *discloses a paging control method*

- *executed by a paging control apparatus* (i.e. the RNC (s), see at least Figure 1 and 2 item 22 and the Abstract) *in a mobile network including*
 - *a core network* (see at least Figure 1 and 2 e.g. items above dash-line 20),

- *a radio access network (see at least Figure 1 and 2 e.g. items below dash-line 20),*
- *and a mobile communication terminal (see at least Figure 1 and 2 and the Abstract),*
- *wherein the radio access network includes a plurality of base stations (i.e. BS_{x,y} as shown in Figure 1 and 2), and a radio network controller (i.e. RNC1 as shown in Figure 1 and 2) serving as the paging control apparatus, the paging control apparatus including at least two controllers (e.g. RNC1 and RNC2, see at least Figure 1B) among which controlling of communication between the core network and the base stations is functionally distributed, one of the at least two controllers (see at least Figure 3A item 244) being a first controller (e.g. RNC1) processing a paging message transmitted from the core network to the radio access network (see at least Figure 3A and column 7 lines 27-46), and wherein the mobile communication terminal performs communication with at least one of the base station via a radio interface (see at least column 3 lines 16-18),*
- *the paging control method comprising:*
 - *receiving at the first controller (e.g. RNC1) the paging message (e.g. the paging message received at event 5-1) transmitted from the core network to the radio access network (see at least column 10 lines 58-67);*

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Wallentin may not specifically disclose *judging at the first controller* (e.g. RNC) a *transmission destination of the paging message by: determining whether an active signal connection currently exists between the mobile communication terminal and the radio access network or the core network, said determining being executed by referring to signal connection information registered within the first controller using an identifier assigned to the mobile communication terminal by the radio access network* . However, in an analogous art, Ahmavaara teaches determining, by a RNC, whether a signal connection exists by referring to signal connection information (i.e. “information about the location of the mobile station with the accuracy of one cell” such information indicates that the cell - essentially the BTS has an active signal connection with the mobile) registered (i.e. within the paging “database 101”, which might be implemented within the RNC according to at least Ahmavaara column 4 lines 25-27) within a first controller (i.e. RNC1) using an identifier assigned (e.g. IMSIs) to the mobile communication terminal by the radio access network (see at least column 3 lines 54-67 and column 4 lines 1-42). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Wallentin by incorporating the judging step taught by Ahmavaara in order to efficiently judge the destination of the paging message.

Wallentin further discloses

- *when the active signal connection is determined to currently exists, judging the transmission destination to be one of the at least two*

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- controllers (e.g. RNC 1) that controls the signal connection (see at least column 11 lines 26-40),*
- *and when the active signal connection is not determined to currently exist, judging the transmission destination to be one of the at least two controllers (e.g. RNC2 which controls a predetermined bases station) that controls a predetermined base station of the base stations or one of the base stations that is identified from the paging message (see at least column 11 lines 42-56);*
 - *and transmitting from the first controller the paging message to the transmission destination (see at least column 11 lines 66-67).*

Regarding **claim 26** (previously presented), Wallentin as modified by Ahmavaara discloses the limitations as shown in the rejection of claim **24**. Wallentin further discloses:

- *wherein the paging message is transmitted by multicast transmission (see at least column 11 lines 39-42, where Wallentin discloses transmitting paging message to the base stations for the cells belonging to a multicell area, therefore transmitting to multiple base stations, thus a multicast transmission).*

Claims 28 (currently amended) and **36** (currently amended) contains similar limitations as that of claim 24 which are rejected on the same ground (s) as addressed in the in rejection of claim 24.

Regarding **claim 29** (currently amended), Wallentin discloses the limitations as shown in the rejection of claim **28**. Wallentin does not expressly disclose the

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limitations of claim 28. However, in a related field of endeavor, Ahmavaara discloses:

- *a connection information registering unit (i.e. the paging database, see at least Ahmavaara column 2 lines 19-25, column 5 lines 1-5) configured to register signal connection information including a first indication of whether a first active connection (e.g. under the first IMSI) between the mobile communication terminal and the radio access network currently exists, a second indication (e.g. under the second IMSI) of whether a second active connection between the mobile communication terminal and the core network currently exists (see at least Ahmavaara column 1 lines 49-53, column 2 lines 14-29),*
- *and a specified controller (i.e. RNC) configured to control the first active connection or the second active connection, wherein the first controller refers to the signal connection information to judge the transmission destination to the specified controller (see at least Ahmavaara column 4 lines 48-53),*

It would have been obvious to a person of ordinary skill in the art to modify Wallentin in view of Ahmavaara in order to efficiently enable multiple signal connections as discussed by Wallentin (see at least Ahmavaara column 2 lines 36-67).

Regarding **claim 30** (currently amended), Wallentin as modified by Ahmavaara discloses the limitations as shown in the rejection of claim **28** and **29**. Wallentin is

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silent as to the limitations of **claim 30**. However, in a related field of endeavor,

Ahmavaara discloses *signal connection information includes:*

- *first connection information including*
 - *the first active connection, a first identifier (i.e. IMSI1, which is associated with the mobile communication terminal, and the association is temporarily stored in the paging database, see at least Ahmavaara column 2 lines 36-40) that temporarily identifies the mobile communication terminal,*
 - *and the specified controller (i.e. RNC) configured to control the first active connection (see at least Ahmavaara column 4 lines 48-53),*
- *and second connection information that associates the first identifier with a second identifier (i.e. IMSI2) having a number form peculiar to the mobile communication terminal,*
- *if the mobile communication terminal sets the second connection (e.g. whether IMSI2 has arrive in an “old” node), and upon receiving a paging message including the second identifier (e.g. IMSI2), the first controller refers to the signal active connection information to judge the transmission destination_ (see at least Ahmavaara column 5 lines 5-15 and 23-36).*

It would have been obvious to a person of ordinary skill in the art to modify Wallentin in view of Ahmavaara in order to efficiently enable multiple signal connections as discussed by Wallentin (see at least Ahmavaara column 2 lines 36-67).

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Regarding **claim 31**(previously presented), Wallentin and Ahmavaara disclose the limitations as shown in the rejection of claim **28, 29** and **30**. Wallentin is silent as to the limitations of claim 31, and Ahmavaara does not expressly disclose that a third identifier, and consequently is silent as to the limitations of claim 31.

Ahmavaara however does disclose that a mobile station may have several IMSI for multiple connections (see at least Ahmavaara column 1 lines 44-53), and therefore, it would have been obvious to a person of ordinary skill in the art to include a third IMSI (which contains information related to the operator's network as one of ordinary skill knows, thus peculiar to the core network), and to page the mobile terminal in the manner disclosed by Ahmavaara and Wallentin in order to support 3 connections.

Regard **claim 33** (previously presented), Wallentin as modified by Ahmavaara discloses the limitations as shown in the rejection of claim **28** and **29**. Wallentin further discloses:

- *wherein when the transmission destination is judged to include multiple controllers or base stations, (see at least column 7 lines 48-67), the first controller copies the paging message, and transmits copied paging message to all the controllers and all the base stations (see at last Figure 5 item 5-3 through 5-6 and corresponding text).*

Regard **claim 34** (previously presented), Wallentin as modified by Ahmavaara discloses the limitations as shown in the rejection of claim **28** and **29**. Wallentin further discloses:

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- *wherein the paging message is transmitted by multicast transmission (see at least column 7 lines 48-67, and Figure 5 item 5-3 through 5-6 and column 11 lines 39-56, where Wallentin discloses transmitting paging message to the base stations for the cells belonging to a multicell area, therefore transmitting to multiple base stations, thus a multicast transmission).*

Regard **claim 35** (previously presented), Wallentin as modified by Ahmavaara discloses the limitations as shown in the rejection of claim **28** and **29**. Wallentin further discloses:

- *the one of the at least two controllers judged as the transmission destination includes the controller further includes:*
 - *a second controller (i.e. RNC2) that controls a base station within a call area of the mobile communication terminal decided by the core network (see at least column 11 lines 39-56),*
 - *and a third controller (e.g. one of the plurality of RNCs that are involved in the paging message as identified in event 5-4) that controls data transfer to the base station controlled by the second controller (see at least column 1143-50),*
 - *upon receiving the paging message from the core network, the first controller transmits the paging message to the second controller or the third controller using a multicast address the second controller or the third controller associated with the call area, the multicast address having been registered in advance(i.e. cell areas which are*

grouped in advanced as shown in Table 1, see at least column 7 lines 48-67) *registered in advance* (see at least column 7 lines 48-67, and Figure 5 item 5-3 through 5-6 and column 11 lines 39-56, where Wallentin discloses transmitting paging message to other RNCs e.g. RNC2 for cells controlled under RNC2, therefore transmission is addressed to multiple base stations, thus a multicast address).

Claims 37 (currently amended) contains similar limitations as that of claim 29 which are rejected on the same ground (s) as addressed in the in rejection of claim 29.

Claims 38 (currently amended) contains similar limitations as that of claim 30 which are rejected on the same ground (s) as addressed in the in rejection of claim 30.

Claims 39 (previously presented) contains similar limitations as that of claim 31 which are rejected on the same ground (s) as addressed in the in rejection of claim 31.

Claims 41 (previously presented) contains similar limitations as that of claim 33 which are rejected on the same ground (s) as addressed in the in rejection of claim 33.

Claims 42 (previously presented) contains similar limitations as that of claim 34 which are rejected on the same ground (s) as addressed in the in rejection of claim 34.

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Claims 43 (previously presented) contains similar limitations as that of claim 35 which are rejected on the same ground (s) as addressed in the in rejection of claim 35.

Regard **claim 44** (previously presented), Wallentin and Ahmavaara disclose the limitations as shown in the rejection of claim **36, 37** and **43**. Wallentin further discloses:

- *wherein the multicast address (i.e. see at least column 7 lines 46-67, as shown in Table 1, there's a list of other RNCs e.g. RNC2 associated with RNC1) of the third controller (i.e. see at least Figure 3B item 248) associated with the second controller (i.e. RNCs e.g. RNC2 as shown in Table 1, see at least column 7 lines 48-67) is registered in advance, and upon receiving the paging message from the first controller,, the second controller transmits the paging message to the third controller using the multicast address (see at least column 7 lines 48-67, and Figure 5 item 5-3 through 5-6 and column 11 lines 39-56, where Wallentin discloses transmitting paging message to other RNCs e.g. RNC2 for cells controlled under RNC2, therefore transmission is addressed to multiple base stations, thus a multicast address).*

Regard **claim 45** (previously presented), Wallentin and Ahmavaara disclose the limitations as shown in the rejection of claim **36, 37, 43** and **44**. Wallentin further discloses:

- *wherein a multicast address including all base stations controlled by the third controller (one of the plurality of other RNCs identified in event 5-4) is*

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registered in advance, and upon receiving the paging message from the second controller, the third controller transmits the paging message to all base stations controlled by the third controller using the multicast address (see at least column 7 lines 48-67, and Figure 5 item 5-3 through 5-6 and column 11 lines 39-56, where Wallentin discloses transmitting paging message to the base stations for the cells belonging to a multicell area, therefore the transmission is addressed to multiple base stations, thus a multicast address).

Regard **claim 46** (previously presented), Wallentin and Ahmavaara disclose the limitations as shown in the rejection of claim **36**, **37** and **43**. Wallentin further discloses:

- *wherein a multicast address including all base stations controlled (see at least column 9 lines 1-15, i.e. list of cells in a MCA controlled by RNC2) by the third controllers is registered in advance, and upon receiving the paging message from the second controller, the third controller transmits the paging message to all base stations controlled by the third controller using the multicast address (see at least column 7 lines 48-67, and Figure 5 item 5-3 through 5-6 and column 11 lines 39-56, where Wallentin discloses transmitting paging message to the base stations for the cells belonging to a multicell area, therefore the transmission is addressed to multiple base stations, thus a multicast address).*

Response to Arguments

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8. Applicant's arguments with respect to claim 24 have been considered but are moot in view of the new ground(s) of rejection. However, the Examiner wishes to clarify the rejection further more. With regard to the interpretation the limitation *an active signal connection*, in the absence of a clear definition from the specification, the Examiner broadly interprets it as any communications exist between the mobile and the radio access network (e.g. a BTS), and such communications might be control or periodical signaling between the BTS and the mobile it serves.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YU (Andy) GU whose telephone number is (571)270-7233. The examiner can normally be reached on Mon-Thur 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on 5712727922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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